

***Remarks***

The applicants thank Examiners Dr. Steadman and Dr. Rebecca Prouty for their effort in working with the applicants, and for their helpful suggestions. The applicants acknowledge telephone conferences with Dr. Steadman on July 17, 2003, July 24, 2003, and August 7, 2003, for the purpose of clarifying the concerns of the examiner. The applicants also thank the examiner for his suggestions sent to the applicants in an informal facsimile on August 7, 2003.

Reconsideration of this Application is respectfully requested. The paragraphs added to the specification were made to incorporate the material from the cancelled original claims into the specification, and introduce no new matter. The amendments to the claims are believed by the applicants to address the concerns of the examiner and to place the application in condition for allowance. The added claim was made at the suggestion of the examiner. The amended claims contain no new matter.

Upon entry of the foregoing amendment, claims 21, 25, 33-35, 38-43, 47, 55-57, 60-65, 67, 68, 72-85, and 103-115 are pending in the application, with claims 21, 43, 65, 86 and 100-102 being the independent claims. New claim 115 is sought to be added. Support for the amendment to claims 80 and 107 is found in the originally filed claim 1. The amendment to claim 64 is made to correct a grammatical error. The amendments to claims 25-35, 43, 47-60, 62, 65, 67, 68, 72-81, 83, 104-108, 110 and 114 were merely a rewording of the claims for clarity and add no new matter. New claim 115 is added to independently claim the deleted subject matter of claim 65 as suggested by the examiner in an informal facsimile to the applicants on July 3, 2003, to further clarify the claim. The new claim adds

no new matter nor changes the scope of the previously presented claim 65. These changes are believed to introduce no new matter.

Based on the above amendment and the following remarks, applicants respectfully request that the examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***Rejection under 35 U.S.C. § 101***

The examiner rejected claims 80 and 107 as being directed to non-statutory subject matter. The examiner suggested the insertion of the word "isolated" prior to the word "polynucleotide" to reflect the hand of the inventor.

The applicants respectfully traverse the rejection. The applicants feel that it is clear from the disclosure and claims that the claims do not encompass non-statutory material. Throughout the specification, Figures and examples, the applicants have provided an abundance of disclosure that requires the "hand of man." The Figures and Examples disclose *in vitro* transcription and translation of the claimed polynucleotides and analysis of products, and at a minimum disclose that the invention claimed is not intended by the applicants to include non-statutory subject matter. Nonetheless, the suggested changes have been made in the claims to further clarify the claims and to advance prosecution. Thus, the applicants believe that the concerns of the examiner have been addressed and request that the rejection under 35 U.S.C. § 101 be withdrawn.

***Rejections under 35 U.S.C. § 112***

The examiner rejected claims 65, 67, 72-78 and 80-85 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants respectfully traverse this rejection. The amendment to claim 65 clarifies the claimed subject matter and is believed to overcome the rejection. Withdrawal of the rejection is requested.

The examiner also rejected claims 65, 68, 72, 73, 75-85 and 115 under 35 U.S.C. § 112, first paragraph because the examiner asserted that the specification does not contain sufficient disclosure that the applicants had possession of the claimed invention at the time the application was filed. This was a New Matter rejection. It is believed that the rejection over claim 115 is in error, as submitted claim 115 was renumbered to claim 114 by the examiner under rule 1.126 (see ¶ 5 of the Office Action mailed 7/10/03, Paper No. 28). Therefore, the applicants will assume herein that the examiner was referring to claim 114.

The examiner stated that the ranges referred to in the claims were not disclosed. The applicants discussed with the examiner during a telephone conversation that the endpoints of these ranges were disclosed, and therefore new matter was not introduced. At the request of the examiner, the support for the endpoints is found as follows: endpoint 73 was disclosed in original claim 3 and the endpoint of residue 1404 was disclosed in original claims 2-4. The specification was amended as discussed *supra*, to incorporate the material from the original claims. The endpoint of residue 3085 was disclosed on page 18, labeled "Sequence Listing," as the last nucleotide in the disclosed sequence. Nucleotide 145 was disclosed on page 18 of the Sequence Listing as the 5' end of the sequence encoding the transmembrane region, denoted by underlining (see also page 3, line 15 for the "Brief description of the

appended figures and sequence listing.” The applicants again thank Examiner Steadman for his comments and insights during the phone discussions on July 17 and July 24, 2003.

The examiner also rejected 107 under 35 U.S.C. § 112, first paragraph because the examiner asserted that the claim contained “subject matter which was not described in the specification in such a way as to reasonable convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicants respectfully traverse the rejection. The applicants direct the examiner’s attention to the Office Action mailed June 13, 2002 (Paper No. 17), wherein the examiner stated that claim 107 lacked a limitation in which glucuronyl C5-epimerase activity was required. As this limitation had been added to the claim in the amendment filed August 26, 2002, the applicants believe that the concerns of the examiner has been addressed. As the examiner has stated in the recent Action, mailed July 10, 2003 (Paper No. 28), that a deletion in the polynucleotide has not been adequately disclosed, the applicants note that there are working examples in the specification, on pages 10 and 11, of enzymatic activity of the encoded product, of the sequences of both encoded products and the polynucleotides of the invention and that one of skill in the art would be able to ascertain using the applicants’ disclosure, that the applicant had possession of the invention, as discussed by applicants in previous replies regarding claim 107.

While the applicants do not agree with the assertions of the examiner, the claim has been amended, as suggested by the examiner in the telephone conversation on July 24, 2003, to further clarify the invention and to advance prosecution.

The examiner also rejected claim 107 under 35 U.S.C. § 112, first paragraph while being enabled for SEQ ID NO: 12, does not reasonably provide enablement for all polynucleotides encoding an amino acid sequence with a deletion of the N-terminal, C-terminal or internal regions of the polynucleotide of claim 103. The applicants respectfully traverse the rejection on the same grounds as set forth under Written Description above. Since the applicants have provided working examples and the claim is limited to a polypeptide with enzymatic activity, the applicants submit that the claim is enabled for the full scope as claimed.

While the applicants do not agree with the assertions of the examiner, the claim has been amended, as suggested by the examiner in the telephone conversation on July 24, 2003, to further clarify the invention and to advance prosecution.

Thus, the applicants believe that the concerns of the examiner have been addressed and request withdrawal of the rejections under 35 U.S.C. § 112.

***Obviousness-Type Double Patenting Rejection***

Claims 21, 33-35, 38-43, 55-57 and 60-64 were rejected under the judicially created doctrine of obviousness-type double patenting over copending application No. 10/005,647. MPEP § 804 paragraph 2 states that “[i]f the “provisional” double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent.” In the telephone conversation with the examiner on July 24, 2003, the examiner

indicated that he would indeed withdraw the Provisional Double Patenting Rejection, as application 10/005,647 has not yet issued.

As it is believed by the applicants that all the remaining rejections have been overcome, the applicants request that remaining Provisional Double Patenting rejection be withdrawn and allow the application to issue as a patent.

#### ***Other Matters***

In the telephone conference on July 24, 2003, the examiner raised an additional issue with the claims dependent upon claims 43 and 65, as lacking an antecedent basis with regard to referring to "isolated polynucleotide" and to which polynucleotide in claims 43 and 65 was being referred. The amendments to the claims 43 and 65, and dependent claims reflect the changes that are believed by the applicants to address the concerns of the examiner.

The applicants request confirmation from the examiner that all of the outstanding rejections under 35 U.S.C. §§ 112, stated in the Advisory Action mailed on September 20, 2002, Paper No. 21, have been withdrawn by the examiner.

#### ***Conclusion***

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the

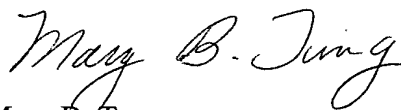
outstanding Office Action and, as such, the present application is in condition for allowance.

If the examiner believes, for any reason, that personal communication will expedite prosecution of this application, the examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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